

# Sudden Infant Death Syndrome/Sudden Unexplained Infant Death (SIDS/SUID) West Virginia 1998-2007



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WEST VIRGINIA  
Department of

**Health & Human  
Resources**



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## SIDS/SUID in West Virginia

Sudden Infant Death Syndrome and Sudden Unexplained Infant Death, SIDS/SUID, is one of the leading causes of post neonatal deaths (death occurring within the first year of life) in West Virginia. Sudden Infant Death Syndrome is a diagnosis of exclusion, meaning that all other possible causes of death must be ruled out before the diagnosis is made. Sudden Unexplained Infant Death is defined as an infant death for which the cause of death is stated to be unknown even after a complete autopsy, thorough case investigation, examination of death scene and review of clinical history. Sudden Unexplained Infant Death comprises a spectrum of possible infant death circumstances, and subsumes many deaths that would have previously been attributed to SIDS. With the institution of more effective death investigation practices, certain deaths that previously would have been classified as SIDS have been reported as accidental suffocation or strangulation in bed (ASSB) or unknown cause of death.

The Child Fatality Review Team (CFRT) was established by the West Virginia Legislature in 1996 to review potentially preventable child deaths. The Team is a multidisciplinary group of professionals whose purpose is to make recommendations on policies and procedures that may reduce child mortality in West Virginia. The CFRT is coordinated by the Office of the Chief Medical Examiner, Bureau for Public Health, Department of Health and Human Resources.

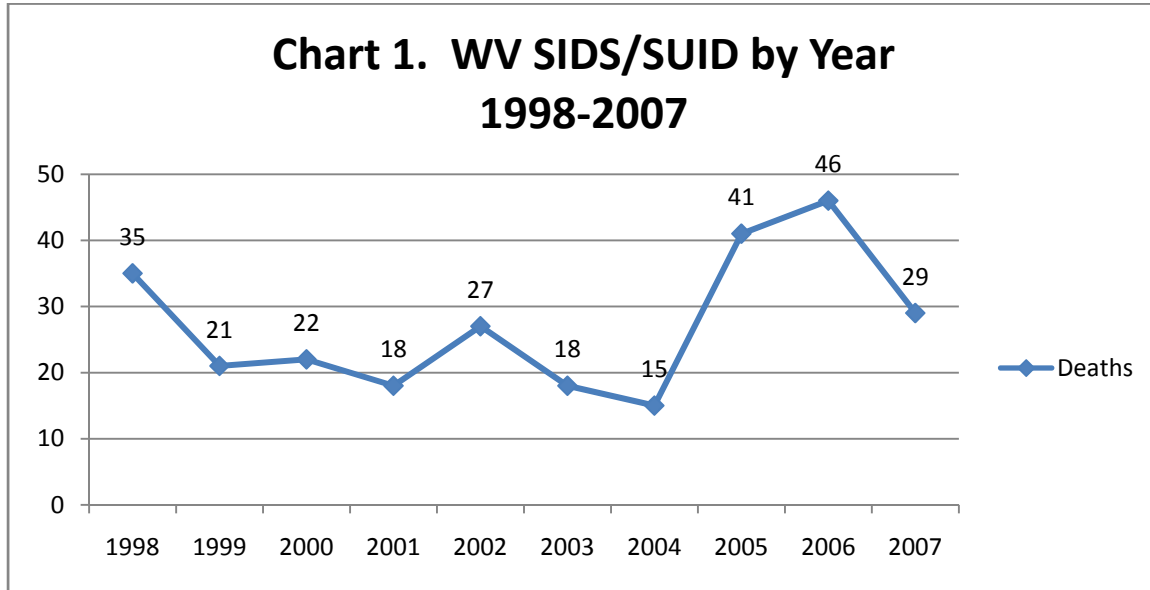
In 2004, the Centers for Disease Control and Prevention (CDC), together with many other agencies and entities with an interest in the reporting of infant death, started an initiative to improve the investigation and reporting of SUIDs. One result of the initiative was a standardized Sudden, Unexplained Infant Death Investigation (SUIDI) Reporting Form, as well as regional training sessions for appropriate personnel in comprehensive death scene investigation.

The CDC and AAP (American Academy of Pediatrics) have identified several major risk factors that increase the chance of both SIDS and SUID. These risk factors include:

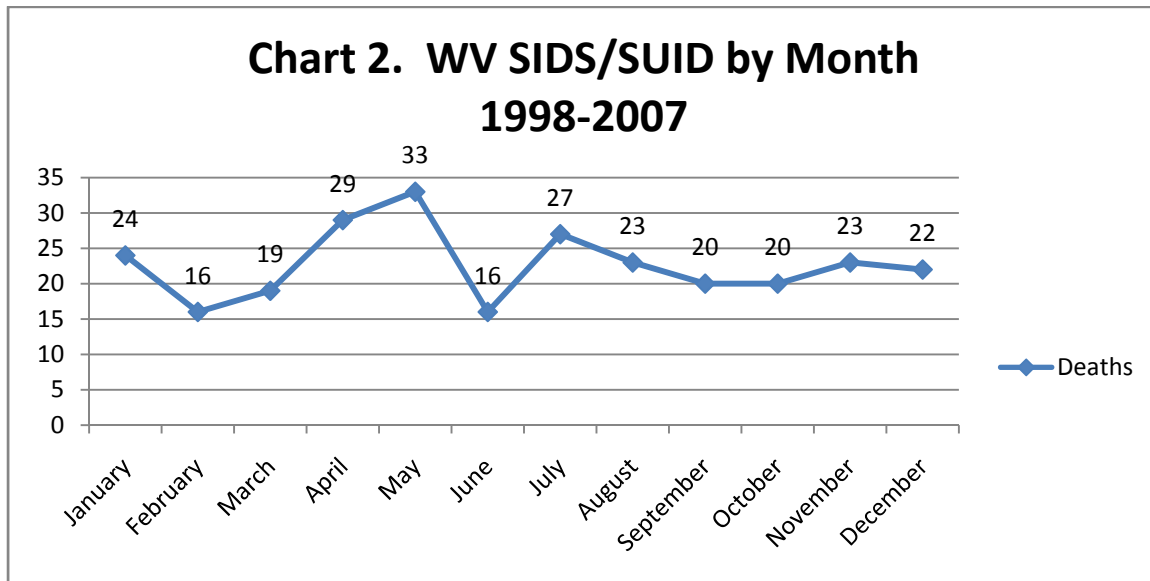
- Sleeping on stomach or side
- Prenatal smoking and exposure to secondhand smoke after birth
- Bed sharing (also called co-sleeping) with others, particularly adults
- Soft sleep surfaces and loose bedding
- Overheating and use of heavy bedding
- Premature birth and low birthweight

The following charts indicate the demographic prevalence of SIDS/SUID in West Virginia for 1998 to 2007. Data were collected from Vital Statistics and the SIDS/SUID Project.

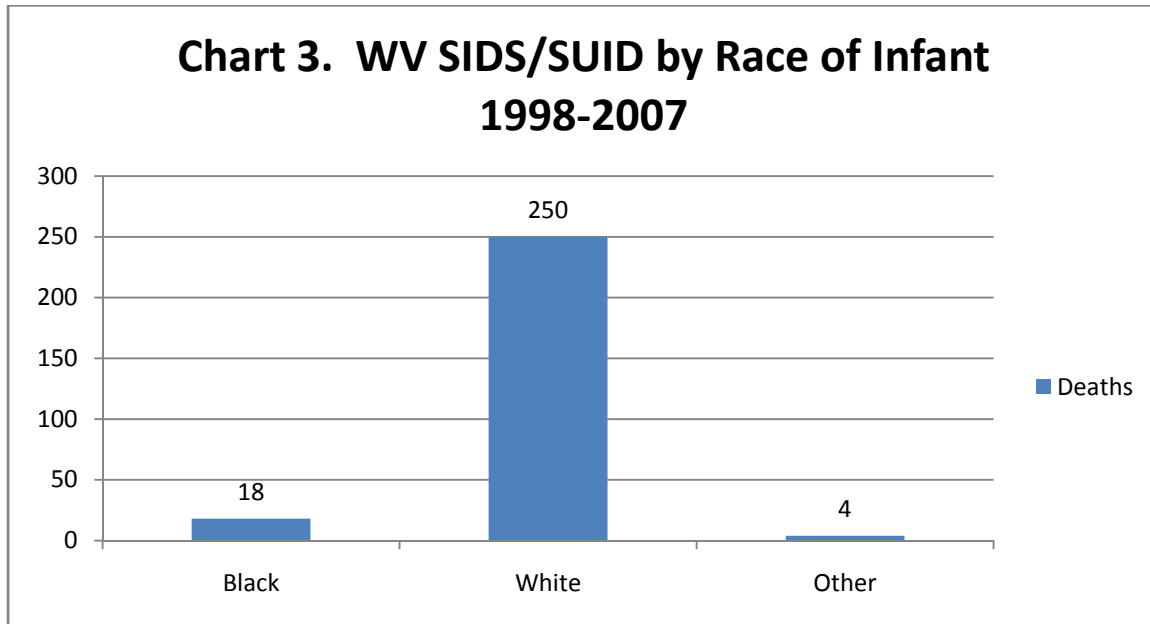
With the change in definition for the coding in Vital Statistics for sudden infant deaths, (R95s) there was an increase in the number of cases beginning in 2005.



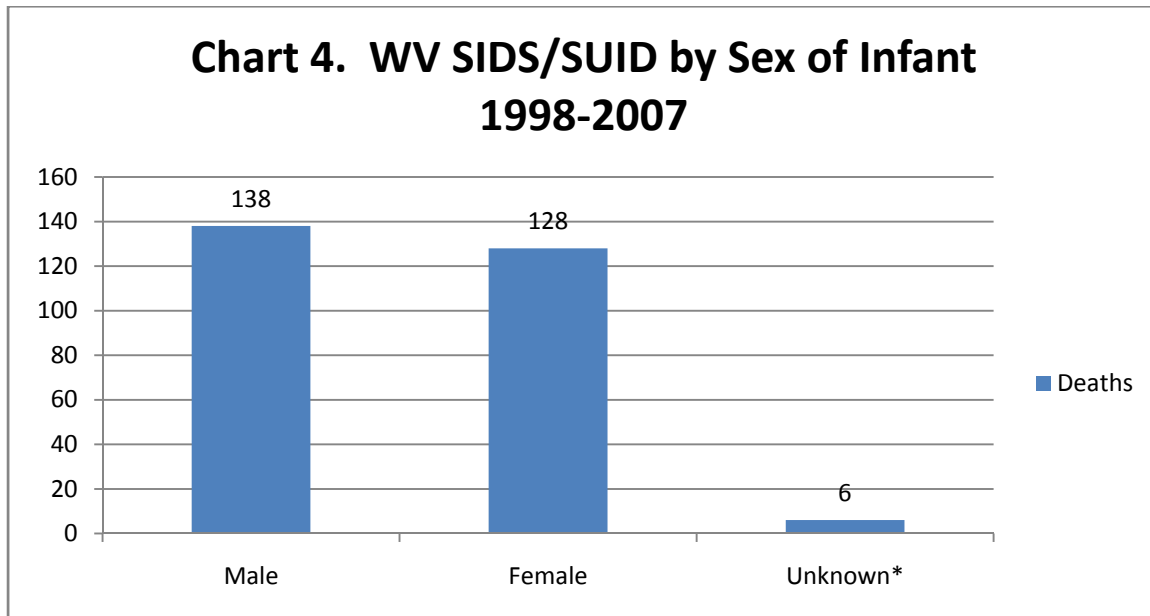
There is no clear pattern for the number of cases identified by month, even with the expectations of increased numbers in winter months, this is not represented in the findings.



With the low population of minorities in West Virginia, specifically Blacks, it is hard to directly relate SIDS/SUID deaths to a particular race. Although Blacks make up just over 3% of the overall population in the state, 6% of SIDS/SUID deaths are within this population.

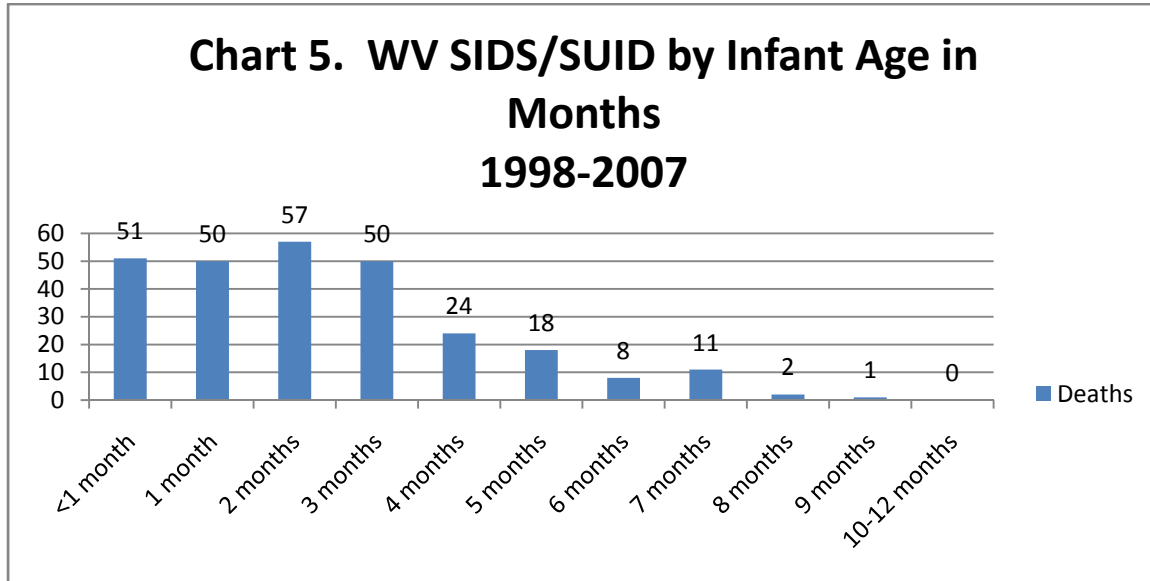


Infant deaths due to SIDS/SUID in West Virginia are not gender specific, both sexes are equally distributed in relation to the number of deaths.



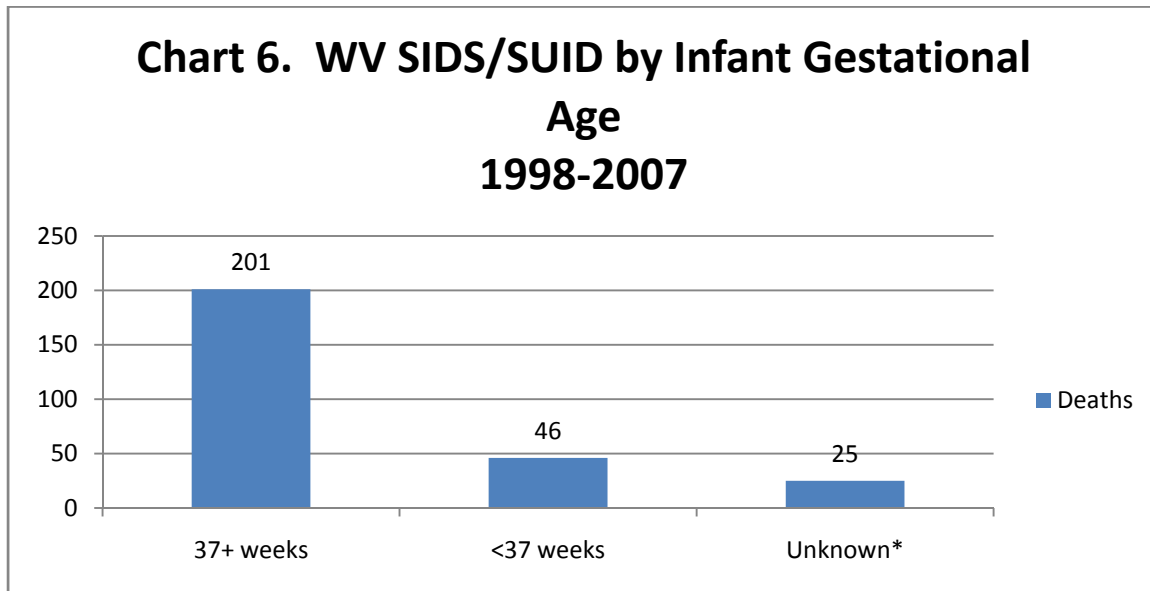
\*unknown is due to infant born or died out of state

As is expected the number of SIDS/SUID infant deaths occur before age one, with the majority of deaths, 76%, occurring within the first three months after birth.



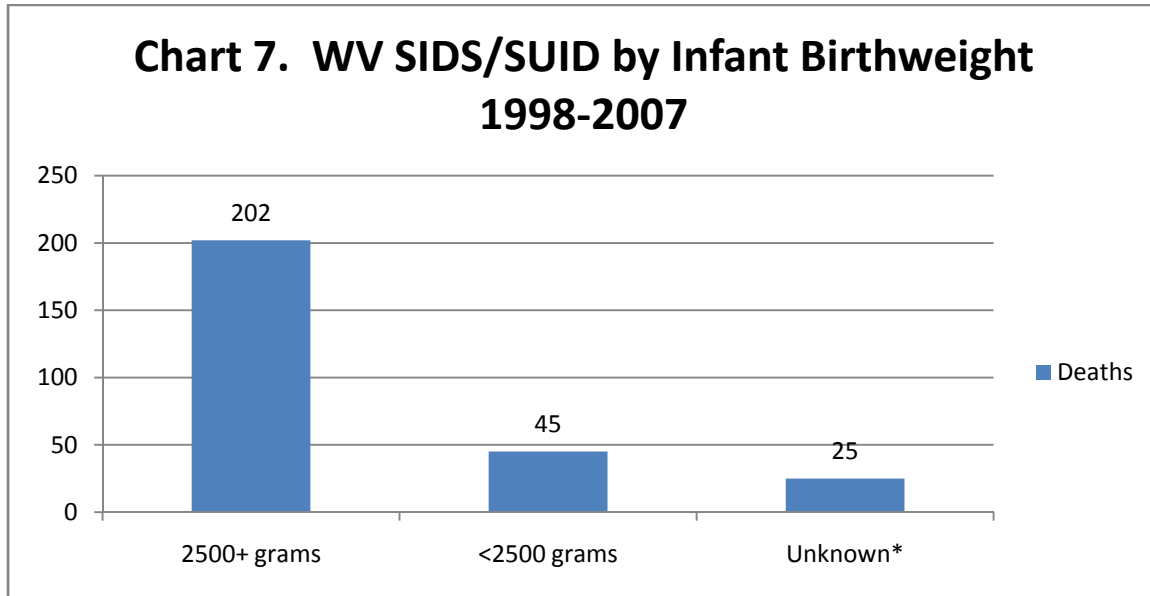
The following charts indicate the prevalence of SIDS/SUID by various risk factors in West Virginia for 1998 to 2007. Data were collected from Vital Statistics and the SIDS/SUID Project.

Preterm infants are considered to be at higher risk for SIDS/SUID but only make up 19% of infant SIDS/SUID deaths in West Virginia (of those with known gestational age).



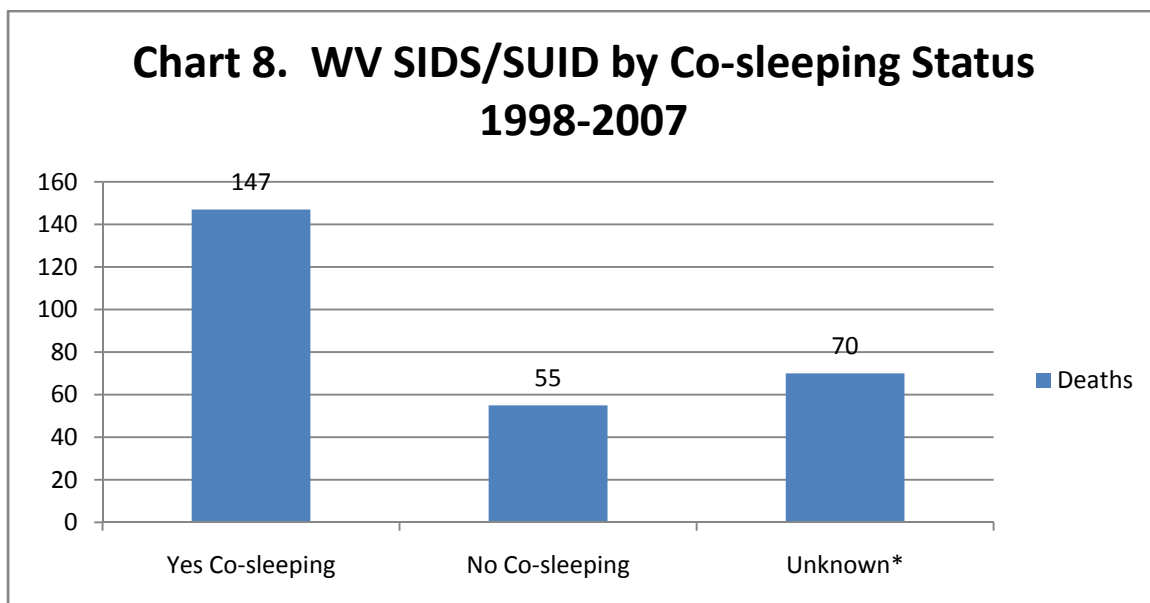
\*unknown is due to infant born or died out of state

Low birthweight infants are considered to be at higher risk for SIDS/SUID but only make up 18% of infant SIDS/SUID deaths in West Virginia (of those with known birthweight).



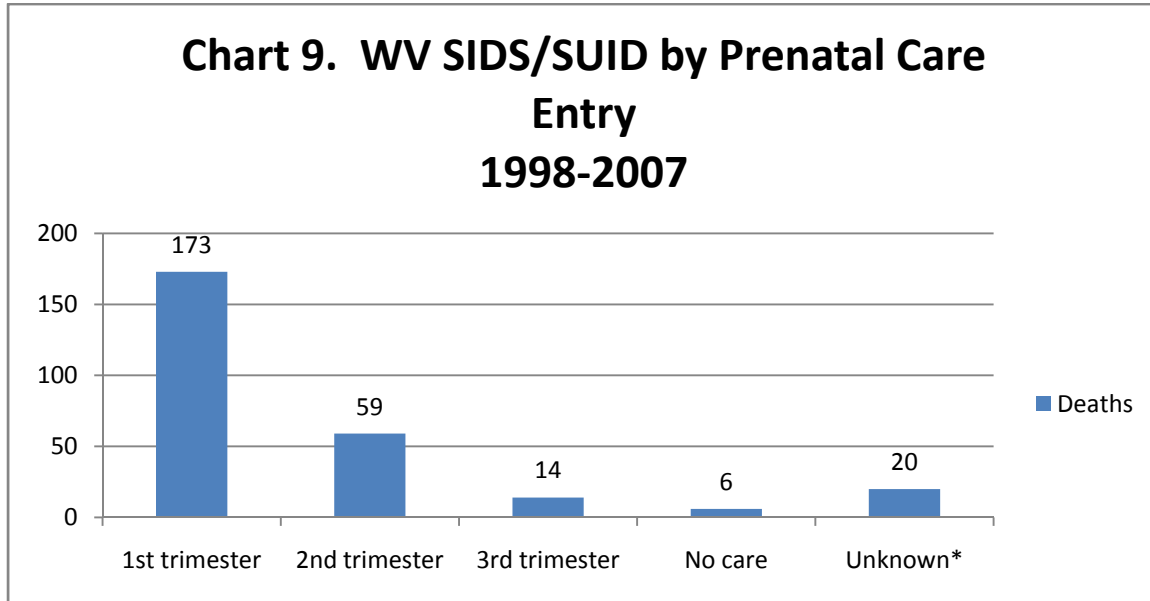
\*unknown is due to infant born or died out of state

More than 70% of the deaths of infants to SIDS/SUID between 1998 and 2007 were identified as co-sleeping/bedsharing at the time of death (of those with known co-sleeping/bedsharing status). While the AAP recommends room sharing for various reasons including the facilitation of breastfeeding, co-sleeping/bedsharing is discouraged.



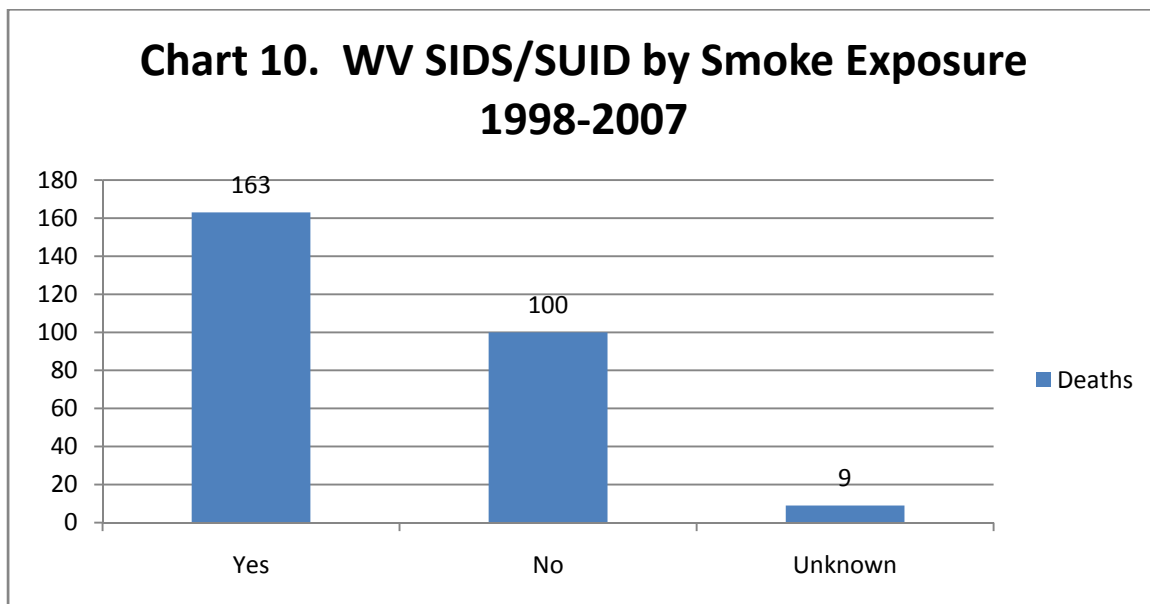
\*co-sleeping status not captured in 1998, number included in unknown

Sixty-nine percent of infant SIDS/SUID deaths in West Virginia were identified as mother entering prenatal care in the first trimester (of those with known entry into prenatal care).



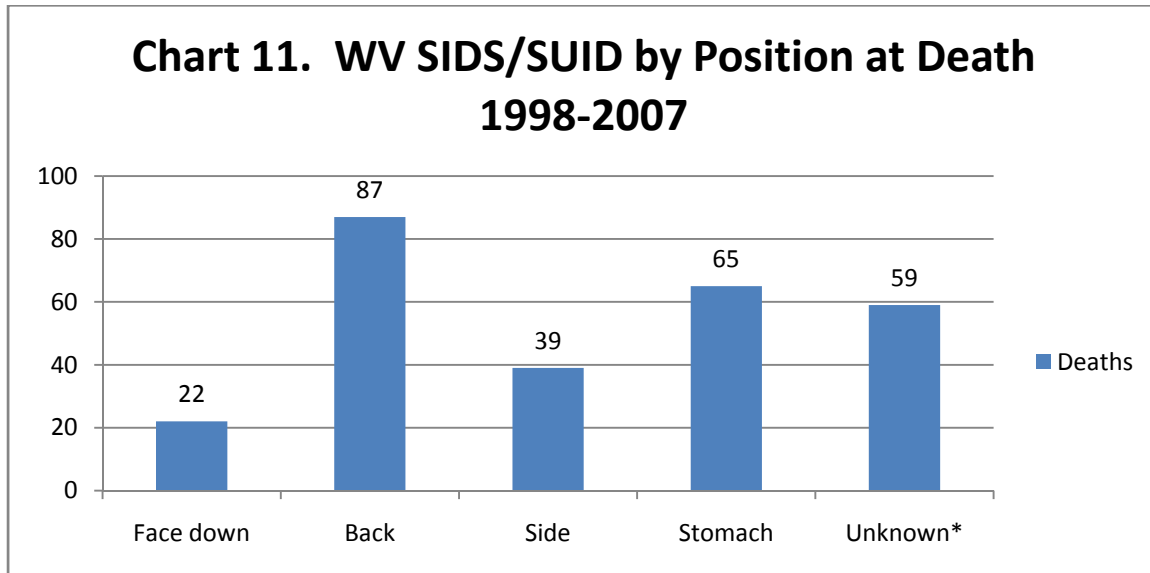
\*unknown includes blank, not collected data

Smoking, both by the mother and others in the household, including before and after delivery can have many negative effects on infants. Nearly 62% of the SIDS/SUID deaths from 1998 to 2007 identified household/caretaker smoking as a risk factor at time of infant death (of those with known smoke exposure).



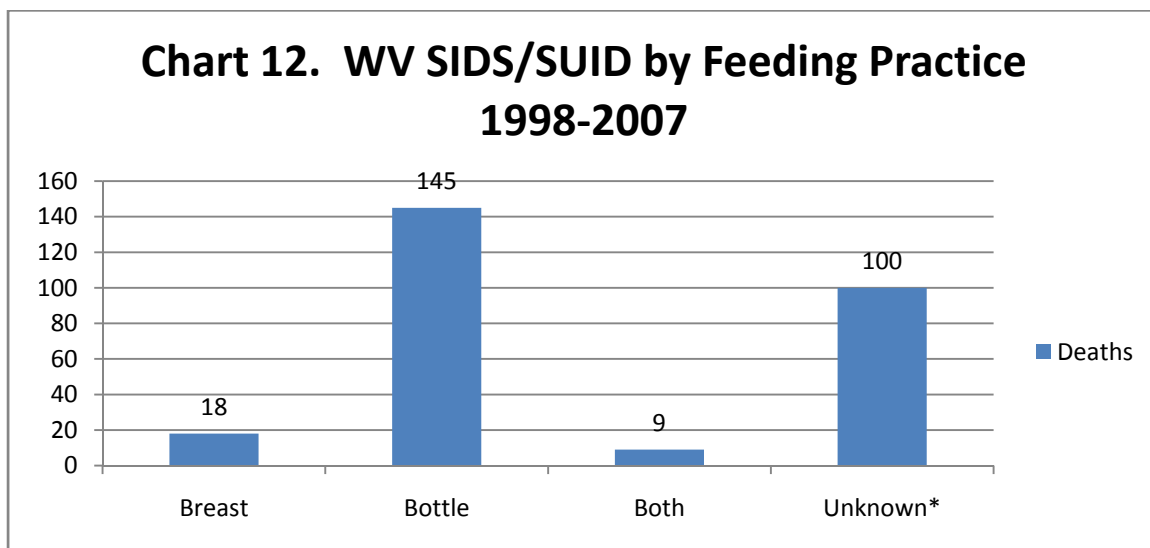


The national “Back to Sleep” campaign reduced the rate of SIDS significantly, however nearly 31% of WV SIDS/SUID deaths during 1998 to 2007 were infants identified as sleeping on their stomach at time of death (of those with known sleep position). Forty-one percent of WV SIDS/SUID were identified as sleeping on their back at time of death (of those with known sleep position).



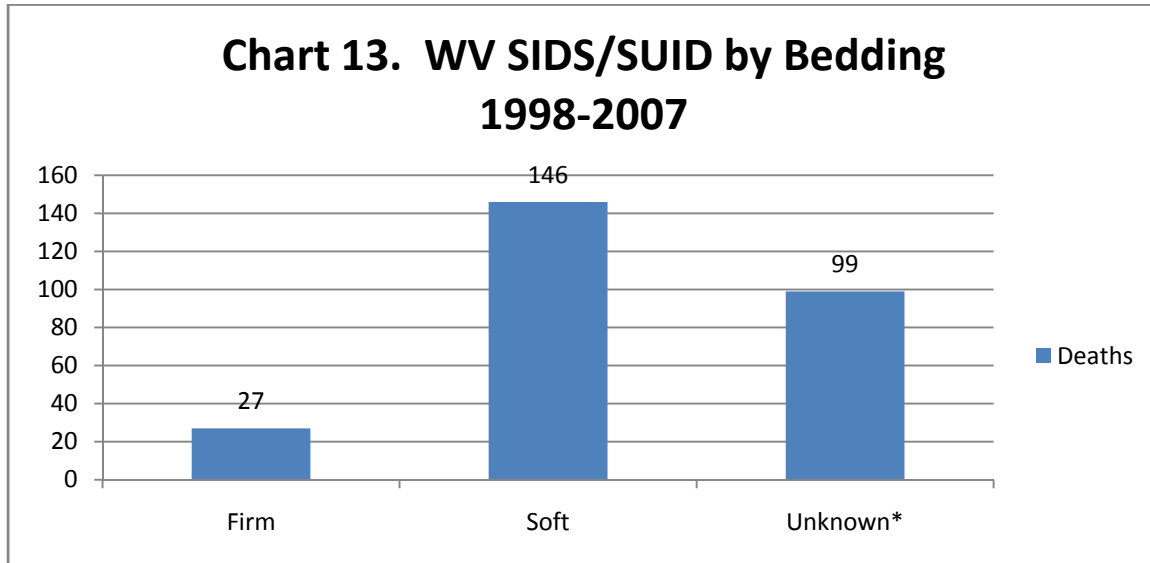
\*position at death not captured in 1998, number included in unknown

From the data available, it is not possible to determine how breastfeeding affects the number of SIDS/SUID deaths from 1998 to 2007. There are a large number of unknowns and the manner in which the data is collected (only asks how the infant is fed, not if the infant was being breastfed at the time of death) leaves this relationship unclear.



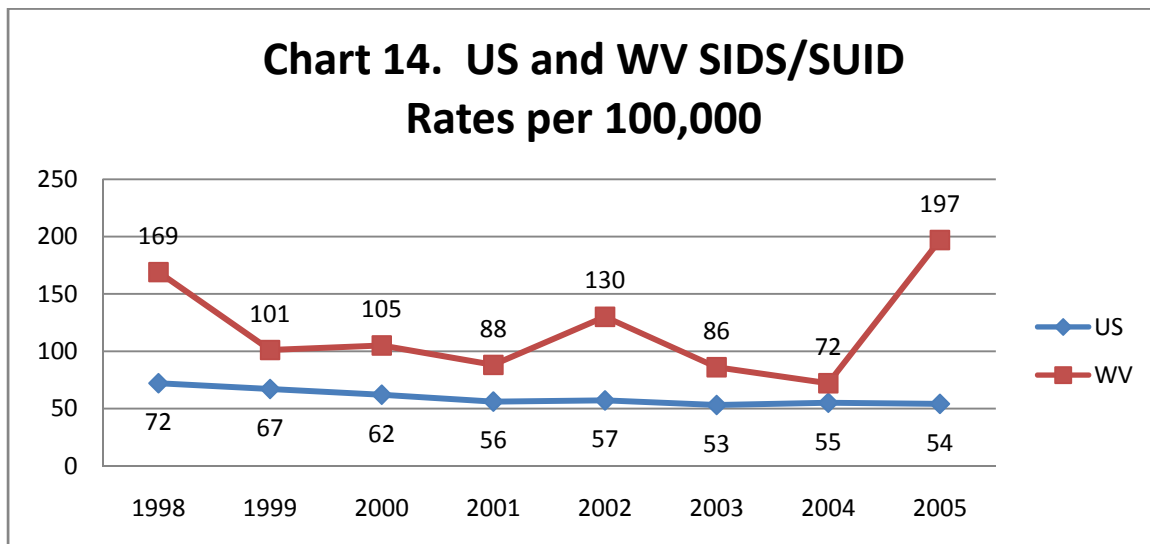
\*feeding practice not captured in 1998/1999/2000, number included in unknown

Any type of improper sleep surface, including the use of pillows, blankets, comforters, soft mattress, toys and others in the infant sleeping area is considered high-risk bedding. High-risk bedding was reported in 54% of the infant SIDS/SUID deaths (of those with known bedding type) in West Virginia during 1998 to 2007.

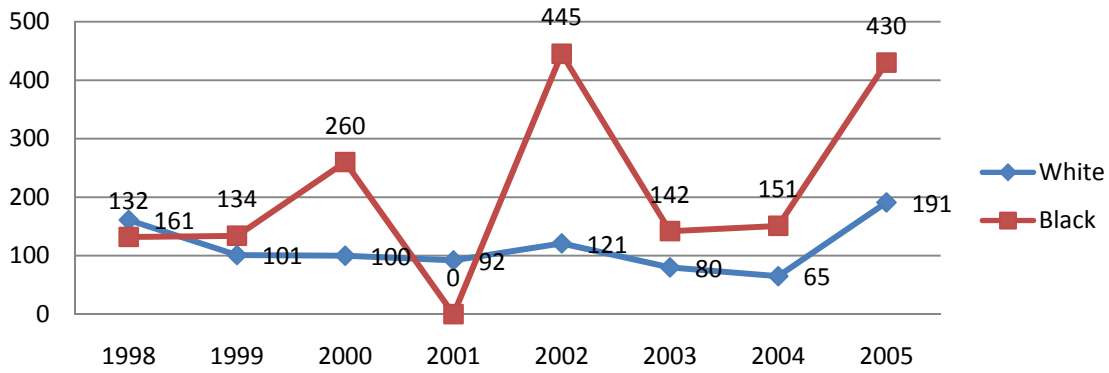


\*bedding not captured in 1998/1999/2000, number included in unknown

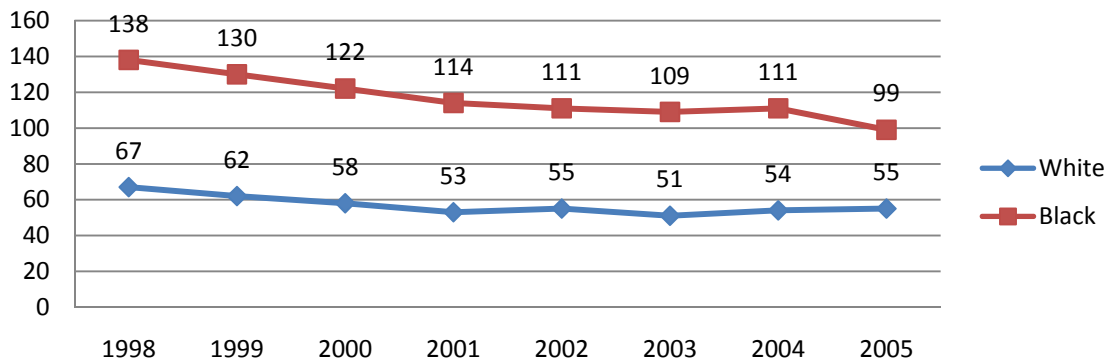
The following charts indicate the comparison of SIDS/SUID rate of West Virginia and the United States 1998-2005. West Virginia is above average overall in the rate of SIDS/SUID, as well as by infant race; both White and Black are much higher in the state compared to the national average.



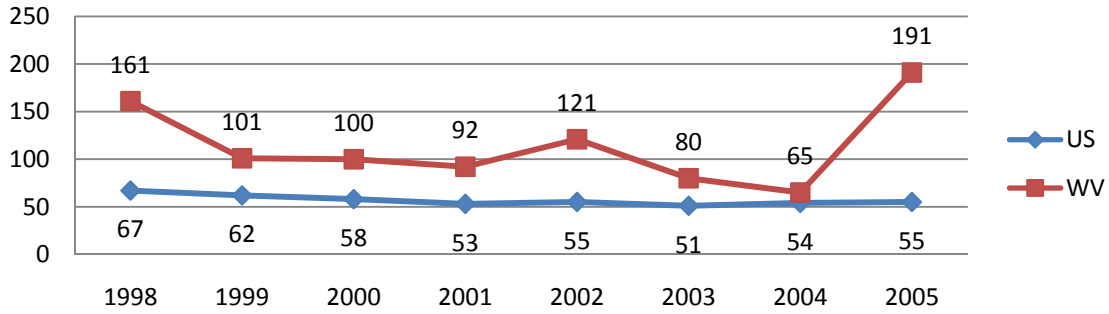
**Chart 15. WV SIDS/SUID Rates by Race per 100,000**



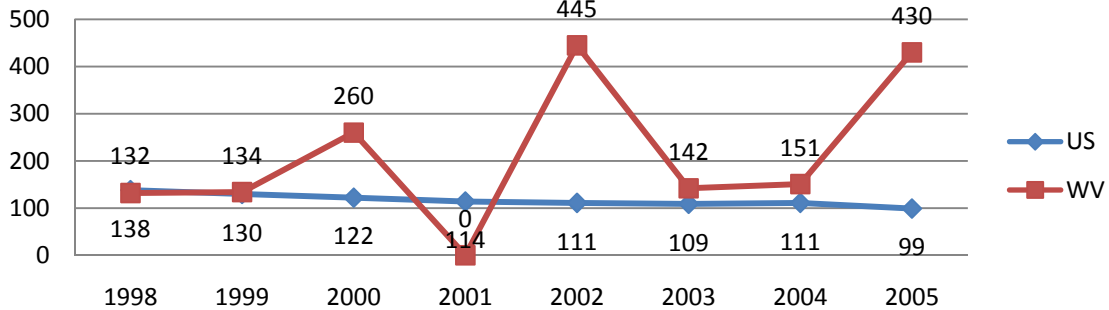
**Chart 16. US SIDS/SUID Rates by Race per 100,000**



**Chart 17. US and WV SIDS/SUID Rates by Race - White per 100,000**



**Chart 18. US and WV SIDS/SUID Rates by Race - Black per 100,000**



The tables on the following pages indicate the number of SIDS/SUID cases and associated rate by county and year. The overall rate was 13.0 per 10,000 births between 1998 to 2007 with a rate increase to 18.2 per 10,000 births between 2005 to 2007 when the inclusion of SUID was added to the Vital Statistics coding of R95s (SIDS). The counties with the highest rates for 1998 to 2007 (> 30 per 10,000) were Gilmer, Logan and Mingo. The highest rates for 2005 to 2007 (> 40 per 10,000) were Boone, Braxton, Gilmer, Hampshire, Mason, Mingo, McDowell and Tucker. Tucker County had no SIDS/SUID cases reported from 1998 to 2005 and then had one case in 2007. Since 1998, there are eight counties who have not experienced any SIDS/SUID: Brooke, Calhoun, Doddridge, Monroe, Pendleton, Pleasants, Tyler and Wirt. It is interesting to note that Pendleton County has not had any infant deaths during this timeframe. Six of these counties have less than 100 births per year.

**Table 1. SIDS/SUIDS Deaths and Rates by County By Year**

County	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	SIDS/SUID Deaths 1998-2007	Total Births 1998-2007	Rate Per 10,000 Births	SIDS/SUID Deaths 2005-2007	Total Births 2005-2007	Rate Per 10,000 Births
Barbour									1		1	1,688	5.9	1	538	18.6
Berkeley		1	1		1		3	2	3	1	12	11,850	10.1	6	4,170	14.4
Boone	1							3		1	5	3,231	15.5	4	961	41.6
Braxton								3			3	1,554	19.3	3	485	61.9
Brooke												2,339			655	
Cabell	3			1	1	1	1	4	3	3	17	11,728	14.5	10	3,591	27.8
Calhoun												782			256	
Clay	1										1	1,354	7.4		399	
Doddridge												723			201	
Fayette	1			2		1		2	1	1	8	5,768	13.9	4	1,784	22.4
Gilmer					1			1	2		4	678	58.9	3	230	130.4
Grant					1					1	2	1,313	15.2	1	370	27.0
Greenbrier					1			1	1	1	4	3,801	10.5	3	1,162	25.8
Hampshire							1	2	1		4	2,331	17.2	3	736	40.8
Hancock		1	1	1	1	2					6	3,358	17.9		955	
Hardy									1		1	1,511	6.6	1	487	20.5
Harrison	2	1	2			1		2			8	8,140	9.8	2	2,488	8.0
Jackson		2			2			1			5	3,232	15.5	1	977	10.2
Jefferson	1	1		1				1		2	6	6,105	9.8	3	2,041	14.7
Kanawha	2	1	3		5	1	2	5	4	6	29	23,844	12.2	15	6,959	21.6
Lewis								1			1	1,944	5.1	1	624	16.0
Lincoln		1				1			1		3	2,807	10.7	1	842	11.9
Logan	5	1	2	2				1	1	2	14	4,508	31.1	4	1,302	30.7
Marion		1	1	1	2		1				6	6,141	9.8		1,879	
Marshall	1		1		1					1	4	3,444	11.6	1	979	10.2
Mason	1					2		1	3	1	8	3,016	26.5	5	953	52.5
Mercer	1	1	1	1	1	2	1		3		11	7,427	14.8	3	2,176	13.8

County	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	SIDS/SUID Deaths 1998-2007	Total Births 1998-2007	Rate Per 10,000 Births	SIDS/SUID Deaths 2005-2007	Total Births 2005-2007	Rate Per 10,000 Births
Mineral	1				1		1		2		5	3,022	16.5	2	905	22.1
Mingo	1	1		2	3			1	4	1	13	3,804	34.2	6	1,133	52.9
Monongalia	1	1					1	2	1		6	8,839	6.8	3	2,713	11.1
Monroe												1,315			413	
Morgan		1							1		2	1,554	12.9	1	489	20.4
McDowell	1		1	1	2			1	3		9	3,053	29.5	4	865	46.2
Nicholas	2		1					1	1	1	6	2,859	20.9	3	943	31.8
Ohio	1	1	1	2	1						6	4,921	12.2		1,506	
Pendleton												831			228	
Pleasants												766			211	
Pocahontas	1								1		2	891	22.4	1	269	37.2
Preston								1	1		2	3,156	6.3	2	990	20.2
Putnam		1	1	1	1		1	1	1		7	6,266	11.2	2	1,897	10.5
Raleigh		3	2		1	3		1	1	1	12	8,949	13.4	3	2,804	10.7
Randolph	2	1				1		1		1	6	3,229	18.6	2	1,015	19.7
Ritchie	1						1		1		3	1,109	27.1	1	307	32.6
Roane										1	1	1,688	5.9	1	480	20.8
Summers		1	1		1						3	1,143	26.2		345	
Taylor			1						1		2	1,580	12.7	1	472	21.2
Tucker										1	1	675	14.8	1	207	48.3
Tyler												918			280	
Upshur	1										1	2,730	3.7		834	
Wayne	2			1			2				5	4,791	10.4		1,370	
Webster								1			1	969	10.3	1	321	31.2
Wetzel	1										1	1,975	5.1		588	
Wirt												583			159	
Wood	1		1	2		1		1	3	2	11	10,151	10.8	6	3,047	19.7
Wyoming			1			2				1	4	2,770	14.4	1	791	12.6
<b>Total</b>	<b>35</b>	<b>21</b>	<b>22</b>	<b>18</b>	<b>27</b>	<b>18</b>	<b>15</b>	<b>41</b>	<b>46</b>	<b>29</b>	<b>272</b>	<b>209,154</b>	<b>13.0</b>	<b>116</b>	<b>63,782</b>	<b>18.2</b>

The American Academy of Pediatrics makes the following recommendations for parents and other care givers on safe sleeping for infants:

- ✓ Always place infants on their backs to sleep, even for naps. Stomach sleeping has been shown to increase the risk of SUID. Side sleeping is no longer considered a safe alternative to back sleeping.
- ✓ Use a firm sleep surface, preferably a firm crib mattress covered by a sheet. Make sure your baby's crib or bassinet meets current safety standards. Beware of secondhand or hand-me-down cribs, cradles, mattresses, or bassinets that may not meet these standards.
- ✓ Keep soft, fluffy bedding and stuffed toys out of the crib. Avoid pillows, comforters, bumper pads (unless thin, firm, and well secured), loose blankets, and sheepskins. If a blanket is used, it should be a thin one that is tucked around the crib's mattress so that it only reaches the infant's chest. Make sure the baby's face and head are left uncovered while sleeping. Sleep sacks are a good alternative.
- ✓ Avoid overheating. The bedroom temperature should be comfortable for a lightly clothed adult. Do not overbundle your baby.
- ✓ A separate sleeping environment is recommended. Infants should not share a bed with either adults or other children. Bring your baby into your bed for breastfeeding or comforting, but then return her to her own bed for sleeping. No one should sleep with a baby on a couch or in an armchair.
- ✓ Never smoke or allow others to smoke around your baby. Cigarette smoke affects a baby's developing lungs and can disrupt her ability to rouse from sleep.

The overall SIDS/SUID rate for all West Virginia counties was 13.0 per 10,000 births between 1998 to 2007 with a rate increase to 18.2 per 10,000 births between 2005 to 2007 when the inclusion of SUID was added to the Vital Statistics coding of R95s (SIDS). With the small population of minorities in West Virginia, specifically Blacks, it is hard to directly relate SIDS/SUID deaths to a particular race. Although Blacks make up just over 3% of the overall population in the state, 6% of SIDS/SUID deaths are within this population. As is expected, the number of SIDS/SUID infant deaths occur before age one, with the majority of deaths, 76%, occurring within the first three months after birth. Preterm infants are considered to be at high risk for SIDS/SUID but only make up 19% of infant SIDS/SUID deaths and low birthweight infants are also considered to be at higher risk for SIDS/SUID but only make up 18% of infant SIDS/SUID deaths. More than 70% of the deaths of infants to SIDS/SUID were identified as co-sleeping/bedsharing at the time of death. Sixty-nine percent of SIDS/SUID deaths were identified as mother entering prenatal care in the first trimester. Smoking, both by the mother and others in the household, including before and after delivery can have negative effects on



infants. Nearly 62% of the SIDS/SUID deaths identified smoking as a risk factor at time of infant death. The national “Back to Sleep” campaign reduced the rate of SIDS significantly, however nearly 31% of WV SIDS/SUID deaths were identified as sleeping on their stomach at time of death with 41% identified as sleeping on their back at time of death. Any type of improper sleep surface, including the use of pillows, blankets, comforters, soft mattress and toys in the infant sleeping area is considered high-risk bedding. High-risk bedding was reported in 54% of the infant SIDS/SUID deaths.

In order to address the SIDS/SUID infant death rate in WV several measures have been put in place to help reduce the number of SIDS/SUID in the state by educating parents and caregivers on the modifiable risk factors associated with SIDS/SUID. Each month the Office of Maternal, Child and Family Health mails postcards to new parents with bulleted information regarding safe sleep for infants. The State Perinatal Program, Right From The Start, discusses during home visitations education on SIDS/SUID, crib safety, co-sleeping/bed-sharing and avoidance of soft bedding. Our Babies: Safe and Sound is an educational campaign that provides parents and other caregivers of infants under the age of one, as well as expectant parents and professionals, with information and tips on ways to keep babies safe while sleeping.

The overall goal of the measures implemented in West Virginia is to reduce the prevalence of SIDS/SUID in our state. It is hoped with the education of new parents/caregivers the risks associated with SIDS/SUID will be modified in turn decreasing the number of SIDS/SUID deaths.